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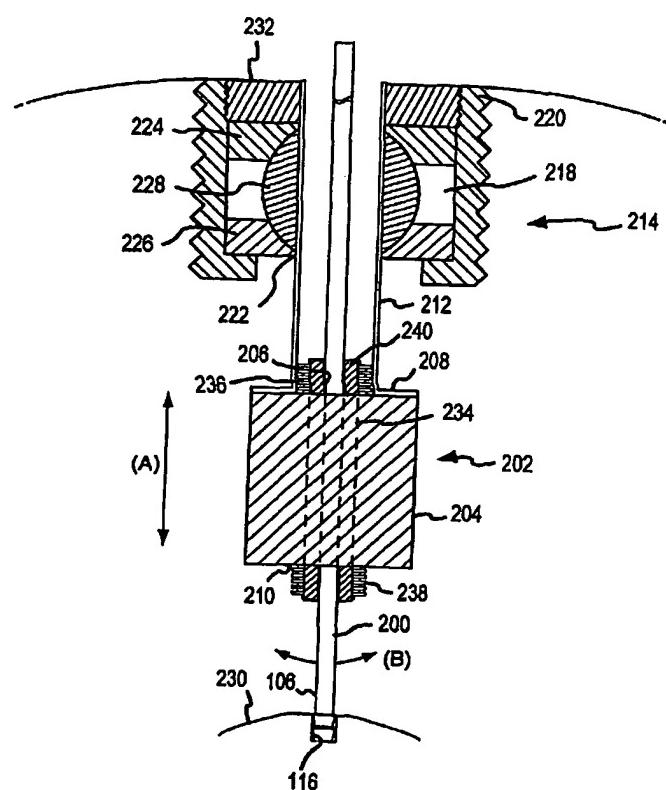
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[Continued on next page]

(54) Title: IMPROVED APPARATUS AND METHOD FOR OSSICULAR FIXATION OF IMPLANTABLE HEARING AID ACTUATOR



(57) Abstract: The invention is directed to a fixation apparatus and method for interfacing an implantable hearing aid actuator with the ossicular chain of a patient. The fixation apparatus may include one or more surface discontinuities to enhance tissue fixation and thereby yield enhanced mechanical coupling and vibratory response. Surface discontinuities may be in the form of surface pores, surface asperities and complex surface shapes such as grooves, slots, lips or openings formed in the fixation apparatus. The fixation apparatus may also and/or alternatively include a portion or component that is deflectable or that comprises a conditioned shape memory material that is activatable at bodily temperatures to yield a degree of lateral loading when the fixation apparatus is positioned within an opening defined within a bone of the ossicular chain of a patient, thereby yielding enhanced mechanical coupling.



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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04R 25/00; 1/02  
US CL : 600/025; 381/337

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- A	US 5,085,628 A (ENGEBRETSON et al.) 04 February 1992 (04.02.1992), See Figures 5-7, column 7, lines 3-26	1, 3, 6, 9-11, 16-18 and 21-23 ----- 2, 4, 5, 7, 8, 12-15, 19 and 20
Y, P — A, P	US 6,540,661 B1 (MULLER) 01 April 2003 (01.04.2003), See Figure 4, column 9, lines 32-49.	1, 3, 6-11 and 16-23 ----- 2, 4, 5 and 12-15
Y	EP 1,094,687 A2 (MULLER) 01 September 2000 (01.09.2000), See Figure 4, column 9, lines 32-49.	1, 3, 6-11 and 16-23

Further documents are listed in the continuation of Box C.

See patent family annex.

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